Stranglehold

Arizona's deserts are choking to death

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Invaders are destroying the Arizona desert.

The enemies are aliens - not creatures from another world but aggressive plants that aren't native to this area.

Weeds on steroids.

These invasive plants can outcompete native species and fuel devastating wildfires.

They're burning and strangling the Sonoran Desert to death.

The postcard views are disappearing: chollas glowing in the sun, spiky ocotillos tipped with scarlet flowers, saguaros standing like sentries.

And the invaders, especially non-native grasses, are taking over. Up the Beeline Highway toward Payson. Out U.S. 60 toward Superior. Around Roosevelt Lake.

More and more places have lost their familiar cactus-studded landscape and now resemble the African savannah.

"It's like turning the Sonoran Desert into a farm for grass," says April Fletcher, Southwestern invasive species coordinator for the U.S. Fish and Wildlife Service.

The wildflowers are going, too.

This spring, a plant called Sahara mustard stormed into desert fields that should have displayed a rainbow of wildflowers.

Instead of a bright mix of purple owl's clover, blue lupine and yellow desert marigold, acre after acre was nothing but solid green mustard. At Lake Mead National Recreation Area on the Nevada-Arizona line, the density reached levels as high as 3 million plants per acre.

This is far more than a loss of scenery, although that's serious enough in state where tourism is a $30 billion industry. Invasive plants steal wildlife habitat. They reduce property values. They feed wildfires, which threaten lives, destroy property and cost millions to fight.

Just how bad can a weed be?

Other states know all too well. The toll of just one plant, leafy spurge, on grazing and wildlands in Montana, North and South Dakota and Wyoming is estimated at $129.5 million a year.

For many reasons, including our harsh climate and the barrier of the Grand Canyon, Arizona has had fewer weed problems than other states.

But advance troops of exotic plants have been moving into the state for years.

Seeds hitch rides on vehicles. They come mixed in with feed and seed mixes from out of state. Some problem plants, like fountain grass, are sold in nurseries for decorative use and then escape into the wild.

The University of Arizona's Tumamoc Hill research station in Tucson had just three non-native species in 1906. By 1983, it had 56.

This year's heavy winter rains gave invasive species a shot of adrenalin. Weeds that seemed a minor problem became a major menace.

These plants may be harmless in their native environment. But they go bad when they hit a place that lacks their natural predators and diseases. Other factors give them an edge, too.

They grow rapidly. They produce massive quantities of seeds that remain viable for a long time - a single Sahara mustard can have 9,000 seeds.

Many weeds seize turf by germinating earlier than native plants and outstripping them. By the

time a sand verbena, a delicate wildflower, has grown an inch wide, Sahara mustard is a foot across.

Buffel grass, one of the nastiest invaders, sucks moisture out of soil so efficiently that even trees can't compete. Paloverdes in thick stands of buffel grass become so parched that they "self-prune," dropping branches to reduce their need for water, eventually pruning themselves to death.

Weeds aren't just choking the desert, they're torching it.

Unlike some eco-systems, such as forests, the desert didn't evolve with fire. Adapted to survive the very driest years, native plants have sparse vegetation and are spaced far apart, leaving most of the landscape open. Lightning occasionally starts a blaze, but it doesn't travel far.

Invasive species fill in all the spaces, ready to carry a fire for miles. Red brome, a non-native grass, is a major culprit in stoking fires in the Phoenix area. It fueled the lower elevations of the recent "Cave Creek Complex" fire, searing about 50,000 acres of Sonoran Desert and racking up $3.6 million in fire-fighting costs.

Saguaros and other plants of the Sonoran Desert never developed tough skins, flame-resistant seeds or other strategies to deal with fire. Invasive plants, on the other hand, come back thicker than ever.

Buffel grass forms dense bunches that have more than 10 times the fuel load needed to carry fire in the desert.

"The more it burns, the more frequently it will burn and the hotter the fire will be," says Travis Bean, a researcher at Tumamoc Hill.

Buffel grass will fuel wildfires in winter, when we didn't have them before, predicts Julio Betancourt of the U.S. Geological Survey. We're poised for more transportation disruptions from highway fires, like this year's closures of Interstate 17 and the Beeline Highway.

Cities are likely to see ferocious new blazes. In Phoenix, buffel grass infests the slopes of Piestewa Peak so heavily that you can see the tan patches from downtown high-rise windows eight miles away. Fountain grass has fed half a dozen fires at South Mountain Park this year.

The way we're headed, says Mark Dimmitt, director of natural history at the Arizona-Sonora Desert Museum, "a few decades from now, I would expect huge areas of the desert to be reduced to wasteland."

Most of the animals won't be there anymore. Not Gila woodpeckers, elf owls, hummingbirds or javelinas.

The transformation is lethal to desert tortoises, which perish in fires and lose the cover that protects them from predators.

It doesn't have to happen. But we must mobilize quickly on several fronts:

• **Education.** We have a lot of catching up to explain the threat and help people recognize invasive plants on their own property. Reports about desert fires should emphasize that they aren't natural and identify the non-native plants that fueled them.

• **Information.** Infestations must be mapped and analyzed. We need a better idea of the most effective modes of attack and more research on biological controls.

• **Structure.** Arizona is just starting to get organizations and cooperative frameworks in place to deal with invasive plants. Another urgent job is to set priorities on which plants to fight and where.

• **Resources.** Of course, we need more money. It's especially critical to step up weed management along roads: Runoff and the warmth from asphalt create ideal conditions for invasive plants to grow and spread. Volunteers can also play a big role, if there's an effective way to mobilize them.

Some people will say that this invasion is too expensive and difficult to fight.

But the costs and risks of doing nothing are far higher than the price of eradicating weeds.

If we give up, some of the most breathtaking views of the Sonoran Desert will only exist on old photos and postcards.

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